

CLAIMS

What is Claimed is:

1. A disposable cleaning head, comprising:
a sponge;
5 a scrim; and
a one-piece flexible fitment, said fitment including a base and an integral engagement member adapted to removably engage a handle.
2. The cleaning head of Claim 1, wherein said sponge comprises a material selected from the group consisting of cellulose, a foam produced from a high internal
10 phase emulsion, polyethylene, polypropylene, polyvinyl alcohol, polyurethane and polyether.
3. The cleaning head of Claim 2, wherein said sponge has a density in the range of 0.8 – 1.5 lb/ft³
4. The cleaning head of Claim 2, wherein said sponge has an indentation force
15 deflection in the range of 24 – 40 lb/50 in².
5. The cleaning head of Claim 1, wherein said sponge has an open pore structure.
6. The cleaning head of Claim 5, wherein said sponge has an average pore size in the range of approximately 3 – 110 pores/linear inch.
- 20 7. The cleaning head of Claim 6, wherein said sponge has an average pore size in the range of approximately 40 – 80 pores/linear inch.
8. The cleaning head of Claim 1, wherein said sponge is substantially disk shaped and has a diameter in the range of approximately 1.0 – 6.0 in.
9. The cleaning head of Claim 8, wherein said sponge has a thickness in the
25 range of approximately 0.5 – 1.0 in.
10. The cleaning head of Claim 1, wherein said scrim includes at least one material selected from the group consisting of cellulose, polyethylene, polypropylene, polyester and polyamide.
11. The cleaning head of Claim 10, wherein said scrim comprises substantially
30 non-woven fibers.
12. The cleaning head of Claim 1, wherein said scrim is substantially disk shaped and has a diameter in the range of approximately 1.0 – 6.0 in.
13. The cleaning head of Claim 12, wherein said scrim has a thickness in the range of approximately 0.10 – 1.0 in.

14. The cleaning head of Claim 1, wherein said scrim has a tensile strength in the range of approximately 2.0 – 20 lb/in².

15. The cleaning head of Claim 1, wherein said scrim includes a cleaning composition, said cleaning composition being dispersible in water.

16. The cleaning head of Claim 15, wherein said cleaning composition includes a component selected from the group consisting of a surfactant, bactericidal agent, chelants, salt, bleaching agent, coloring agent, preservative, fragrance and mixtures thereof.

17. The cleaning head of Claim 16, wherein said surfactant is selected from the group consisting of sodium lauryl sulfate, sodium xylene sulfonate, coco amine oxide, nonoxynol-9, linear alkyl naphthalene sulfonate, ethoxylated alcohol, alkyl ether sulfates, alcohol ethoxysulfates, alkyl benzene sulfonate, alpha olefin sulfonate, linear alcohol ether sulfates, linear primary alcohol ethoxylate, alkyl sulfates, alkyl aryl sulfonates, amine oxides, taurates, sarcosinates, isethionates, linear alkylbenzene sulfonates, and mixtures thereof, said bactericidal agent is selected from the group consisting of N-alkyldimethylbenzylammonium chloride, phenolic biocides, peroxides, sodium dichloroisocyanurate, dihydrate, alkali metal and alkaline earth metal hypochlorites, chloramines chlorimines, chloramides, chlorimides, heterocyclic N-Bromo and N-Chloro cyanurates, halogenated hydantoins, halogenated melamines, inorganic hypohalite releasing agents, benzalkonium chlorides and substituted benzalkonium chlorides, di(C₆-C₁₄)alkyl di short chain (C₁₋₄ alkyl and/or hydroxyalkyl) quaternaryammonium salts, N-(3-chloroallyl) hexaminium chlorides, benzethonium chloride, methbenzethonium chloride, cetylpyridinium chloride, dimethylbenzylammonium chlorides, dialkylmethylbenzylammonium chlorides, polyhexamethylene biguanide hydrochloride, p-chlorophenyl biguanide; 4-chlorobenzhydryl biguanide, halogenated hexidines and mixtures thereof, said chelant is selected from the group consisting of salts of ethylenediamine tetraacetic acid, ethylenediamine triacetic acid, ethylenediamine tetrapropionic acid, diethylenetriamine pentaacetic acid, nitrilotriacetic acid, oxydisuccinic acid, iminodisuccinic acid, mellitic acid, polyacrylic acid or polymethacrylic acid and copolymers, benzene polycarboxylic acids, gluconic acid, sulfamic acid, oxalic acid, phosphoric acid, phosphonic acid, organic phosphonic acids, acetic acids, citric acid and mixtures thereof, said salt is selected from the group consisting of alkali metal and alkaline earth salts of mineral acids, sodium sulfate, silicate, metasilicate, polysilicate, borate, hydroxide, carbonate, carbamate, phosphate, polyphosphate, pyrophosphates,

triphosphates tetraphosphates, and mixtures thereof, said bleaching agent is selected from the group consisting of hypohalite sources, peracids, sodium percarbonate, sodium perborate, sodium persulfate, potassium persulfate, and mixtures thereof, and said coloring agent comprises FD & C Blue No. 1.

18. The cleaning head of Claim 17, wherein said surfactant comprises in the range of approximately 1.0 – 100.0 wt. % of said cleaning composition, said bactericidal agent comprises in the range of approximately 0.01 – 10.0 wt. % of said cleaning composition, said chelant comprises in the range of approximately 0.01 – 10.0 wt. % of said cleaning composition, said salt comprises in the range of approximately 1.0 – 50.0 wt. % of said cleaning composition, said bleaching agent comprises in the range of approximately 1.0 – 40.0 wt. % of said cleaning composition, and said coloring agent comprises in the range of approximately 0.001- 0.3 wt. % of said cleaning composition.

19. The cleaning head of Claim 16, wherein said coloring agent achieves an equilibrium color change within approximately 30 seconds after said cleaning head is immersed in water.

20. The cleaning head of Claim 19, wherein said coloring agent is substantially dispersed in said water substantially coincident with substantial dispersion of said cleaning composition.

21. The cleaning head of Claim 16, wherein said fragrance comprises in the range of approximately 0.1 – 30.0 wt. % of said cleaning composition.

22. The cleaning head of Claim 1, wherein said fitment is constructed of a material selected from the group consisting of polyethylene and polypropylene.

23. The cleaning head of Claim 1, wherein said fitment is constructed of low density polyethylene.

24. The cleaning head of Claim 1, wherein said fitment includes a substantially disk shaped base having a diameter in the range of approximately 0.5 – 6.0 in.

25. The cleaning head of Claim 24, wherein said fitment base has a thickness in the range of approximately 0.010 – 0.100 in.

26. The cleaning head of Claim 1, wherein said fitment base includes at least one flexible zone.

27. A disposable cleaning head, comprising:

a sponge;

a scrim; and

a fitment, said fitment including an engagement member adapted to removably engage a handle, said engagement member including non-mechanical articulating means.

28. A disposable cleaning head, comprising:

a scrim; and

5 a one-piece flexible fitment, said fitment including a base and an integral engagement member adapted to removably engage a handle.

29. A disposable cleaning head, comprising:

a sponge; and

10 a one-piece flexible fitment, said fitment including a base and an integral engagement member adapted to removably engage a handle.

30. A disposable cleaning head for cleaning a surface, comprising:

a flexible fitment having a bottom surface, said fitment including a base and an integral engagement member adapted to removably engage a handle;

15 a sponge having top and bottom surfaces, said sponge top surface being secured to said fitment bottom surface; and

a scrim having top and bottom surfaces, said scrim top surface being secured to said sponge bottom surface, said scrim including a dispersible cleaning composition,

said cleaning head having less than a 50% increase in resistive force between said scrim and the surface during dispersion of said cleaning composition.

20 31. A disposable cleaning head for cleaning a surface, comprising:

a fitment, said fitment including a base and an integral engagement member adapted to removably engage a handle;

a sponge; and

a scrim, said scrim having a bottom surface adapted to contact the surface,

25 said cleaning head being adapted to angularly articulate in the range of at least 25° - 35° relative to said handle without a substantial reduction in surface contact between said scrim and the surface.